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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/578,383

06/01/2007

Tsutomu Nagaoka

65512 (70801)

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7590

12/01/2009

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EXAMINER

YANG, NELSON C

ART UNIT

PAPER NUMBER

1641

MAIL DATE

DELIVERY MODE

12/01/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/578,383	Applicant(s) NAGAOKA ET AL.	
	Examiner Nelson Yang	Art Unit 1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 2 and 10-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>6/2/06, 8/21/09</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of claim 1 in the reply filed on August 28, 2009 is acknowledged. The traversal is on the ground(s) that the common shared technical feature of a film of electroconductive fine particles is not taught by the prior art. This is not found persuasive because the common special technical feature asserted by applicants of a film of electroconductive fine particles, is known in the art, as shown by Vossmeier et al. [US 2002/0132361] as further discussed below. Therefore, applicant's arguments are not found persuasive.

However, to allow applicants to respond to the new reference, the restriction requirement has not been made final.

Claims 3-9 have been rejoined, as they depend from claim 1 as well.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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Claims 1, 3, 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Vossmeier et al. [US 2002/0132361].

With respect to claim 1, Vossmeier et al. teach an inert substrate with a nanoparticle film comprising a nanoparticle network modified by probes and interlinked by linker molecules spin coated onto interdigitated electrodes (para. 0032, 0075, 0089, 0100, 0126)

With respect to claim 3, Vossmeier et al. teach a nanoparticle film comprising a nanoparticle network modified by probes and interlinked by binders such as dodecylthiol and 1,9, nonanedithiol molecules (para. 0089, -149, 150).

With respect to claim 5, the nanoparticles are gold (para. 0075)

Claims 1, 3, are rejected under 35 U.S.C. 102(a) and under 35 U.S.C. 102(e) as being anticipated by Snow et al. [US 2004/0029288].

With respect to claim 1, Snow et al. teach an insulating substrate with a pair of interdigitated electrodes a film of particles that are conductive and modified with a probe such as an encapsulating ligand shell

With respect to claim 3, the particles may be gold nanoclusters (para. 0020, 0039).

Claims 1, 3, 3-5, 7-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Wada et al. [US 2005/0056828].

With respect to claim 1, Wada et al. teach a pair of electrodes located on the surface of a insulated substrate and a film comprising fine nanoparticles of gold modified with DNA (para. 0046-0049, 0055, 0073-0074).

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With respect to claims 3, 6, Wada et al. teach that particles comprise binders such as decanedithiol (para. 0070).

With respect to claims 4, 7-9, Wada et al. teach particles modified with organic molecules having thiol groups or amino groups at the terminals, such as DNA (para. 0194, 0213).

With respect to claim 5, Wada et al. teach gold nanoparticles (para. 0213).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vossmeier et al. [US 2002/0132361] in view of Primel et al. [US 2002/0115819].

With respect to claim 6, Vossmeier et al. teach a nanoparticle film comprising a nanoparticle network modified by probes and interlinked by dithiol groups such as dodecylthiol and 1,9, nonanedithiol molecules (para. 0089, -149, 150).

Primel et al., however, establishes that 1,9, nonanedithiols and 1,10-decanedithiol are equivalent dithiols known in the art. Therefore, because these two were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found

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it obvious to substitute 1,10-decanedithiol for 1,9, nonanedithiol molecules as the linkers of Vossmeier et al.

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nelson Yang whose telephone number is (571)272-0826. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Shibuya can be reached on (571)272-0806. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nelson Yang/

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Primary Examiner, Art Unit 1641